This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (new) A rectifying charge storage device, comprising:

a rectifier structure fabricated with a common conductor forming a side of the rectifier structure; and

a capacitor structure fabricated as a single unitary structure with the rectifier structure such that the capacitor structure incorporates the common conductor of the rectifier structure as a side of the capacitor structure, the capacitor structure to receive the rectified current from the rectifier structure over the common conductor;

one of said rectifier structure and said capacitor structure comprising a sensor responsive to an environmental parameter for altering the electrical characteristics of the device.

2. (new) The rectifying charge storage device of claim 1, wherein said sensor is incorporated into said rectifier structure.

3. (new) The rectifying charge storage device of claim 1, wherein said sensor is incorporated into said capacitor structure.

4. (new) The rectifying charge storage device of claim 1, wherein said sensor comprises a pressure sensor.

5. (new) The rectifying charge storage device of claim 1, wherein said sensor comprises a light sensor.

6. (new) The rectifying charge storage device of claim 1, wherein said sensor is responsive to a target chemical agent.

7. (new) The rectifying charge storage device of claim 1, wherein said capacitor structure comprises said common conductor, a second conductor, and a dielectric material therebetween, said sensor being incorporated into said dielectric material.

8. (new) The rectifying charge storage device of claim 7, wherein said sensor is responsive to the environmental parameter for altering the electrical resistance between said common and second conductors.

9. (new) The rectifying charge storage device of claim 8, wherein said sensor comprises an insulated polymer incorporating a matrix of conductive particles therein.

10. (new) The rectifying charge storage device of claim 7, wherein said sensor is responsive to the environmental parameter for altering the dielectric constant of said capacitor structure.

11. (new) The rectifying charge storage device of claim 7, wherein said sensor is responsive to the environmental parameter for altering the dimensional spacing between said common and second conductors.

12. (new) The rectifying charge storage device of claim 11, wherein said sensor comprises a swellable elastomer.

13. (new) The rectifying charge storage device of claim 1, wherein said sensor comprises a photosensitive diode.

14. (new) The rectifying charge storage device of claim 1, wherein said sensor comprises a light emitting diode.

15. (new) The rectifying charge storage device of claim 1, wherein said sensor comprises a break diode.

16. (new) The rectifying charge storage device of claim 1, wherein said sensor comprises a break capacitor.

17. (new) The rectifying charge storage device of claim 1, wherein said sensor is adapted for irreversible state change in response to detection of the environmental parameter.

18. (new) The rectifying charge storage device of claim 1, further including an amplifier circuit coupled to said common conductor for providing an output signal representative of the environmental parameter.

19. (new) The rectifying charge storage device of claim 18, wherein said amplifier circuit includes an FET transistor.

20. (new) The rectifying charge storage device of claim 18, wherein said output signal is a parameter-responsive variable voltage output signal.

21. (new) The rectifying charge storage device of claim 18, wherein said output signal is a parameter-responsive variable frequency output signal.

22. (new) The rectifying charge storage device of claim 1, further including a substrate supporting the rectifier and capacitor structures.

23. (new) The rectifying charge storage device of claim 22, wherein said capacitor structure comprises said common conductor, a second conductor, and a dielectric material therebetween, said substrate being incorporated into said dielectric material.

24. (new) A rectifying charge storage device, comprising:

a rectifier;

a common conductor connected to one side of said rectifier;

a capacitor incorporating said common conductor;

said rectifier, common conductor and capacitor comprising a unitary element; and

a sensor responsive to an environmental parameter for altering the electrical characteristics of the unitary element.

25. (new) The rectifying charge storage device of claim 24, wherein said sensor in incorporated into one of said rectifier said capacitor.

26. (new) The rectifying charge storage device of claim 24, wherein said sensor comprises a pressure sensor.

27. (new) The rectifying charge storage device of claim 24, wherein said sensor comprises a light sensor.

28. (new) The rectifying charge storage device of claim 24, wherein said sensor is responsive to a target chemical agent.

29. (new) The rectifying charge storage device of claim 24, wherein said capacitor comprises said common conductor, a second conductor, and a dielectric material therebetween, said sensor being incorporated into said dielectric material.

30. (new) The rectifying charge storage device of claim 29, wherein said sensor is responsive to the environmental parameter for altering the electrical resistance between said common and second conductors.

31. (new) The rectifying charge storage device of claim 30, wherein said sensor comprises an insulated polymer incorporating a matrix of conductive particles therein.

32. (new) The rectifying charge storage device of claim 29, wherein said sensor is responsive to the environmental parameter for altering the dielectric constant of said capacitor.

33. (new) The rectifying charge storage device of claim 29, wherein said sensor is responsive to the environmental parameter for altering the dimensional spacing between said common and second conductors.

34. (new) The rectifying charge storage device of claim 33, wherein said sensor comprises a swellable elastomer.

35. (new) The rectifying charge storage device of claim 24, wherein said sensor comprises a photosensitive diode.

36. (new) The rectifying charge storage device of claim 24, wherein said sensor comprises a light emitting diode.

37. (new) The rectifying charge storage device of claim 24, wherein said sensor comprises a break diode.

38. (new) The rectifying charge storage device of claim 24, wherein said sensor comprises a break capacitor.

39. (new) The rectifying charge storage device of claim 24, wherein said sensor is adapted for irreversible state change in response to detection of the environmental parameter.

40. (new) The rectifying charge storage device of claim 24, further including an amplifier circuit coupled to said common conductor for providing an output signal representative of the environmental parameter.

41. (new) The rectifying charge storage device of claim 40, wherein said amplifier circuit includes an FET transistor.

42. (new) The rectifying charge storage device of claim 40, wherein said output signal is a parameter-responsive variable voltage output signal.

43. (new) The rectifying charge storage device of claim 40, wherein said output signal is a parameter-responsive variable frequency output signal.

44. (new) The rectifying charge storage device of claim 24, further including a substrate supporting the rectifier and capacitor structures.

45. (new) The rectifying charge storage device of claim 44, wherein said capacitor structure comprises said common conductor, a second conductor, and a dielectric material therebetween, said substrate being incorporated into said dielectric material.